ATTACHMENT A
Remarks

Claims 1-3, 5, 8-66, 69, 78, 80, 87-89, 94 and 96-109 are pending in the present application with claims 2, 10-12, 17-40, 42-62, 64, 71-78, 80, 87-89, 94 and 96-108 previously withdrawn from consideration. By this amendment, Applicants have amended claims 1, 3, 8-13, 41, 53, 63, 65, 69, 70 and 73, and cancelled claims 4, 6, 7, 67, 68, 79, 81-86, 90-93 and 95 and added new claim 109. Applicants respectfully submit that the present application is in condition for allowance based on the discussion which follows.

As an initial point, Applicants respectfully submit that the amendments to previously withdrawn claims 10-12 and 71-73 render these claims directed to the invention identified in the restriction requirement of Group I. Specifically, claims 10-12 have been amended to depend directly or indirectly from claim 3 and claims 71-73 have been amended to depend directly or indirectly from claim 65, where both claims 3 and 65 are of Group I. Therefore, claims 10-12 and 71-73 as amended should be joined to Group I and examined in this application.

Claim 41 was objected to as being dependent from a non-eligible claim 17 which, by this amendment, Applicants have amended claim 41 to be in independent form thereby rendering this objection now moot.

Claim 81 was objected to for having a typographical error, which by this amendment, Applicants have cancelled claim 81 now rendering this objection moot.

Claims 1, 3-9, 13-16, 79 and 82-86 were rejected under 35 U.S.C. § 112, second paragraph. With regard to claims 1 and 79, it was alleged that reciting "spontaneous differentiation" renders the claims ambiguous. Without addressing the

merits of the objection, in order to facilitate prosecution of this case, Applicants have deleted the word "spontaneous" from claims 1 and 79. Further, Applicants submit that amended claims 1 and 79 are fully supported by the specification as filed since the specification clearly provides a description of methods for modulating differentiation as now claimed.

Further with regard to claims 7-9, 68-70 and 84-86, it was alleged that the inclusion of the term "or functional equivalents thereof" renders these claims indefinite. Applicants respectfully submit that the present specification provides adequate support for one skilled in the art to know the metes and bounds of the claimed invention with regard to what is a functional equivalent of the recited term.

Moreover, one of ordinary skill in the art would readily appreciate what functional equivalent would enable the claimed method especially in the context in which the term is used, namely giving due consideration to the preamble of claims 1, 8, 9, 63, 65, 69 and 70. The relevant preamble includes the restriction that the method must be for the purpose of inhibiting differentiation of a stem cell. In order to expedite examination of this application, Applicants have further clarified the claim by amending the claims to now recite "or functional equivalents thereof capable of inhibiting differentiation of the stem cell". Applicants respectfully submit that one of ordinary skill in the art, based on the present disclosure, would be enabled to conduct routine tests to determine any potential functional equivalent which is capable of inhibiting stem cells, thereby providing clear metes and bounds of the claims. Furthermore, no undue experimentation would be required in order to practice the invention as now claimed.

Accordingly, Applicants respectfully request that the rejection to these claims under 35 U.S.C. § 112, second paragraph be withdrawn.

Claims 13, 41, 79, 81-86, 90-93 and 95 were rejected for being in improper method claim form. By this amendment, claim 13 has been amended to include the requirement that the second agent, e.g., NGF alpha, is co-incubated with the LPL agonist; claim 41 has been amended to recite a method comprising positive steps of exposing a stem cell to a LPL agonist; and claims 79 and 81-86, 90-93 and 95 have been cancelled. Based on the foregoing, Applicants respectfully request that the rejection to the aforementioned claims be withdrawn.

In addition, claims 13, 41, 79, 81-86, 90-93 and 95 were rejected under 35 U.S.C. § 101 for not being in a proper method claim form. For the reasons stated above with regard to the response to the rejection of these claims under 35 U.S.C. § 112 second paragraph, Applicants respectfully submit that this rejection has been overcome.

Claims 1, 3, 5-9, 13-16, 79, 81-86 and 90-92 were rejected under 35 U.S.C. § 112, first paragraph (enablement). It was alleged that the specification, while being enabling for methods for inhibiting the differentiation of stem cells using a method which comprises incubating the stem cell in the presence of S1P or dihydro-S1P, the specification does not provide enablement for methods for enhancing differentiation comprising a method of incubating a stem cell in the presence of an agonist of a LPL receptor.

By this amendment, Applicants have amended the relevant claims in order to more clearly recite that the method is for inhibiting the differentiation of stem cells.

Applicants respectfully submit that the specification clearly enables the claims as now recited.

Claims 1, 3-5, 7-9, 63, 68-70, 79, 82, 84-86, 90-93 and 95 were rejected under 35 U.S.C. § 112, first paragraph (written description) alleging that the subject matter was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possessed the claimed invention with regard to any agonist of a LPL receptor. By this amendment, Applicants have amended the claims to recite specific LPL receptor agonists which are fully disclosed in the specification as filed and therefore the specification provides a written description for the claimed subject matter. Accordingly, Applicants respectfully request that the rejection to the aforementioned claims under 35 U.S.C. § 112, first paragraph be withdrawn.

Claims 3 and 19 were rejected under 35 U.S.C. § 112 first paragraph for allegedly reciting "a ligand of a class III tyrosine kinase receptor" without providing any structural limitation on the "ligand". Further it was alleged that the only functional limitation of the ligand is that it binds but not whether it activates the receptor. Applicants respectfully submit that the specification as filed provides sufficient disclosure with regard to the ligand of class III tyrosine kinase receptor which with the recited agonist of the LPL receptor binds, and therefore the specification provides a sufficient written description for one of ordinary skill in the art to believe that the inventors had possesed the invention at the time of filing the application.

Claims 1, 4-9, 13, 14, 41, 63, 66-70, 79, 82-86, 90 and 93 were rejected under 35 U.S.C. § 102(e) as being anticipated by Lindquist et al.

Applicants respectfully submit that the present invention is not anticipated by Lindquist et al which is specifically directed to studies with regard to rat stem cells. In order to more clearly recite Applicants' invention, Applicants have amended the claims to specifically be limited to human stem cells. One of ordinary skill in the art will readily appreciate that there are significant differences between human stem cells and rat stem cells. This is evidenced by the fact that Lindquist demonstrates that S1P has the property of causing adult stem cells to proliferate and differentiate in rats which is the opposite of what is claimed in the present application. Thus rat stem cells and human stem cells are not the same. The opposite affects of S1P on rat stem cells and human stem cells clearly demonstrates the novelty and non-obviousness of the present claims over Lindquist. Accordingly, Applicants respectfully request that the rejection to the claims under 35 U.S.C. 102(e) be withdrawn.

Claims 1, 4-9, 14, 41, 63, 66-70, 79, 82-86, 90 and 93 were rejected under 35 U.S.C. 102(a) as being anticipated by Harada et al. The presently claimed invention is not anticipated nor made obvious in view of Harada et al as Harada does not disclose a human stem cell but instead discloses the use of a rat neuroprogenitor cell. As discussed above with regard to the rejection of the claims by Lindquist, the differences in a rat model as compared with human cells clearly demonstrates that the present invention, which is specifically directed to human stem cells, is not in any way anticipated or made obvious by Harada which is specifically directed to rat cells. While the present application discloses that S1P inhibits differentiation, the Harada reference shows that S1P merely causes gross morphological changes such as aggregation and cell rounding. The differential effects of S1P on rats versus human cells is evidence of

novelty and non-obviousness of the presently claimed invention over Harada. In view of the foregoing, Applicants respectfully request that the rejection to the claims under 35 U.S.C. 102(a) be withdrawn.

Claim 65, although listed as rejected on the cover page of the Office Action, was not rejected within the body of the Office Action and, therefore, presumed to be and, further, respectfully submitted to be allowable.

Finally, with regard to claims 10-12 and 71-73, Applicants respectfully submit that these claims are clear of the prior art and in compliance with 35 U.S.C. § 112 as stated above with regard to claims 3 and 65, from which these claims depend.

In view of the foregoing, Applicants respectfully submit that the present application is in condition for allowance.

END REMARKS